

REVENICATIONS

- 1- Neutron detector comprising as scintillating material $\text{Cs}_{(2-z)}\text{Rb}_z\text{LiLn}_{(1-x)}\text{X}_6 : x\text{Ce}^{3+}$, where X is either Br or I, Ln is Y or Gd or Lu or Sc or La, where z is greater or equal to 0 and less or equal to 2, and x is above 0.0005.
- 2- Neutron detector according to preceding claim, wherein x is above 0.005.
- 3- Neutron detector according to one of preceding claims, wherein x is less than 0.3.
- 4- Neutron detector according to one of preceding claims, wherein x is less than 0.15.
- 5- Neutron detector according to one of preceding claims, wherein it is under the form of a monocrystal.
- 6- Neutron detector according to preceding claim, wherein the volume of the monocrystal is at least 10 mm^3 .
- 7- Neutron detector according to either of claims 1 to 4, wherein it is under the form of a powder.
- 8- Neutron detector according to preceding claim, wherein it is either packed or sintered or mixed with a binder.
- 9- Neutron detector according to one of preceding claims, wherein its formula is $\text{Cs}_2\text{LiYX}_6 : x\text{Ce}^{3+}$.
- 10- Neutron detector according to one of claims 1 to 8, wherein its formula is $\text{Rb}_2\text{LiYX}_6 : x\text{Ce}^{3+}$.
- 11- Use of a material of formula $\text{Cs}_{(2-z)}\text{Rb}_z\text{LiLn}_{(1-x)}\text{X}_6 : x\text{Ce}^{3+}$, where X is either Br or I, Ln is Y or Gd or Lu or Sc or La, where z is greater or equal to 0 and less or equal to 2, and x is above 0.0005, in neutron detection.
- 12- Use according to preceding claim wherein x is above 0.005.
- 13- Use according to one of preceding use claims, wherein x is less than 0.3.
- 14- Use according to preceding use claim, wherein x is less than 0.15.
- 15- Use according to one of preceding use claims, wherein the material is under the form of a monocrystal.
- 16- Use according to preceding claim, wherein the volume of the monocrystal is at least 10 mm^3 .

- 17- Use according to one of claims 11 to 14, wherein it is under the form of a powder.
- 18- Use according to preceding claim, wherein it is either packed or sintered or mixed with a binder.
- 5 19- Use according to one of preceding claims, wherein its formula is $\text{Cs}_2\text{LiYX}_6:\text{xCe}^{3+}$.
- 20- Use according to one of claims 11 to 18, wherein its formula is $\text{Rb}_2\text{LiYX}_6:\text{xCe}^{3+}$.
- 21- Material of formula $\text{Rb}_2\text{LiYX}_6:\text{xCe}^{3+}$ where X is either Br or I, Ln is Y or Gd or Lu or Sc or La, and x is above 0.0005.
- 10 22- Material of formula $\text{Cs}_{(2-z)}\text{Rb}_z\text{LiLn}_{(1-x)}\text{I}_6:\text{xCe}^{3+}$, where Ln is Y or Gd or Lu or Sc or La, where z is greater or equal to 0 and less or equal to 2, and x is above 0.0005.
- 23- Material according to claim 21 or 22, where x is above 0.005.
- 15 24- Material according to one of preceding claims of materials, wherein x is less than 0.3.
- 25- Material according to preceding claim, wherein x is less than 0.15.
- 26- Material according to one of preceding claims of materials, wherein it is under the form of a monocristal.
- 20 27- Material according to preceding claim, wherein the volume of the monocristal is at least 10 mm^3 .
- 28- Material according to one of claims 21 or 22, wherein it is under the form of a powder.
- 29- Material according to preceding claim, wherein it is either packed or sintered or mixed with a binder.
- 25